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ANALYSIS OF FIVE THOUSAND CASES OF SKIN DISEASE.¹

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SECOND PAPER.

As stated in the beginning, the affections enumerated in the tables there given may be more particularly considered to best advantage by the groups or classes into which they naturally fall by mutual relationship. Just what is the most natural or practical system of dividing or arranging skin diseases it is not the purpose of this paper to discuss. I have adopted that of Professor Hebra (Table II.), not that I think it perfect, for it might be made simpler by reducing the number of its classes, but because I think it is on the whole by far the best, and the best known.

Class I., *Hyperemias*, and Class II., *Anæmias*, for instance, might seem to be useless in a system of classification, because of five thousand consecutive cases of disease not one is referred to them, while hyperæmia is one of the most constant and important phenomena of a large proportion of them. It is, however, because it is a symptom merely, and one in a chain of tissue-changes, that its occurrence in them does not suffice to characterize and enroll them in the class of which it is the sole and essential type. The hyperæmic affections belonging properly to Class I. are mainly the fugitive congestions of the skin, like the erythemas and roseolas accompanying the exanthemata, and following contact with the milder irritants (rubefacients), which are so trivial and fleeting in their course that they do not present themselves at dispensaries for treatment. The anæmias of the skin (Class II.) are almost wholly symptomatic of general conditions of disease, and can scarcely be considered as independent cutaneous affections.

Class III. *Affections of the Cutaneous Glands* (91 cases). It is largely in connection with the diseases placed in this group that the remark made in the beginning concerning the differences in character of the affections occurring in private and in dispensary practice holds true, especially if we were to consider with them those which might be held

¹ Continued from page 89.

to be merely their advanced stages. The cause of such difference is of easy explanation. The disorders of the glands, both functional and structural, seldom give rise to subjective symptoms of a distressing character, or in any way affect the general condition or life of the patient, although they are most frequent sources of disfigurement. They are, therefore, largely neglected by those classes of society which care little for troubles which do not interfere with their grosser ideas of comfort, while on the other hand they are so annoying to those who prize beauty and cleanliness as essentials of living, that they are often considered as of more importance than other really serious derangements of the system. Affecting apparently all classes alike, the number of patients seeking relief from them among the refined and wealthy is therefore vastly in excess of the proportion they bear in these tables, which mainly represent the other class. We see, for instance, that seborrhœa occurs but fifty-five times, and forms only about one per cent. of all cases, whereas in two thousand consecutive cases tabulated from my private record-books it occurs more than two hundred times, or ten per cent. of all cases.

Of the affections of these baceous glands, the most common, as will be seen, are those embraced under this term seborrhœa, which according to Hebra's definition, too abundant flow of sebum, includes a great variety of forms, according to seat and changes in the character of the secretion. A few of the cases were of the oleosa type and of the face, affecting the nose and forehead, giving to these parts the greasy look, and accompanied in a small proportion by the reddened and congested condition of the cutaneous tissues, called seborrhœa congestiva. The larger part of them, however, in the proportion of three to one, were seated upon the scalp, and were either of the dry (sicca) type, characterized by white branny scales, or of the moist (oleosa) kind, marked by collections of greasy matter. This affection, commonly called dandruff or pityriasis, and often regarded as a disease of the epidermis, is really but a modified secretion of sebum, the cells of the glands failing to undergo their normal fatty degeneration and conversion into fluid oil within the glands, and escaping either in the form of dry and silvery, or greasy and adherent epithelial cells upon the general surface of the scalp. In addition to the discomfort and disfigurement it causes, it is of great importance in its relations to alopecia and eczema of the scalp. Of the former, the alopecia furfuracea of Hebra and Kohn,¹ it is the earliest stage, the change in the formation of the epithelial cells of the gland extending gradually to the corresponding cells of the annexed hair follicle, and thus preventing the development of healthy and long-lived hairs. It is by far the most frequent cause of early baldness, and rarely comes

¹ See the JOURNAL of June 8, 1871, for an excellent description of this affection by Kohn

under treatment until its real importance is impressed upon the patient by the loss of hair. Its great frequency may be estimated by the large percentage it forms of the cases in private practice above given, for although a small proportion of the two hundred there enumerated were undoubtedly seborrhœa of the face alone, yet if to these had been added the very numerous cases recorded simply as alopecia, but which are really the later stages of this affection, it would show a still higher preponderance.

Of eczema, too, seborrhœa of the scalp is a very frequent cause, both in adult life and in childhood. The constant attempts of the patient to remove the offensive collections by such rough means as fine-toothed combs, stiff brushes, irritating hair-washes, and the like, together with the heat, itching, and scratching provoked by the presence of the scales, lead sooner or later to congestion of the skin, and in turn to chronic infiltrated eczema, or moist and acute eczematous inflammation, not only of the scalp but of the neighboring parts also. The very common form of infantile eczema caused by the collection of the sebum upon the scalp can hardly be referred to this class, for in the majority of cases there is no seborrhœa present, and the formations are merely accumulations of normal sebum and dirt, in consequence of ignorance on the part of the mothers and nurses as to the importance and proper means of its removal.

That but three cases of so common an occurrence as comedones are recorded in this class is explained by the statement that only those were recorded as such in which they formed the sole affection of the sebaceous glands, and which were so abundant as of themselves to lead the patient to seek relief. Associated with acne, however, they occurred in a large majority of cases, and as an important factor in the aetiology of that disease. The same may be said of milium, so far as the individuality of the cases mentioned is concerned, but it was not infrequently seen in connection with, although forming no part of, other cutaneous diseases.

Molluscum contagiosum was observed nine times. The position of this mysterious affection in this class may, in the light of recent investigations into its anatomy, be looked upon doubtfully. Reference to the last semi-annual report on dermatology in the *JOURNAL*¹ will show that good grounds exist for the opinion that the peculiar cells which form the structure of these tumors are modifications and growths of the rete mucosum, and not of the sebaceous glands.² This change of seat, however, even if accepted as a fact, would throw no additional light into the obscurity surrounding the nature of the disease. The cases yielded no positive evidence of its contagious character, as in every instance the

¹ December 2, 1875.

² See paper by Dr. Cäsar Boeck, *Vierteljahrsschrift für Dermatologie und Syphilis*, ii. Jahrgang, i. Heft.

patient was the only member of the family affected. One case was that of a nursing mother with a numerous crop upon the left breast. Five of the patients were young children, and four of this number were only two years old. In five of them the growths were limited to the face, and were almost wholly seated about the eyelids.

Xeroderma, too, of which thirteen cases were observed, is placed in this group with some hesitation. The term is used here to mean simply dry skin, the integument over parts of the body, or over the whole of it, being from birth harsh, dry, and at times scaly and cracked, as if there were a diminution in the normal secretion of both sebaceous and sweat glands. The peculiarities, however, are quite as marked in the palms, where none of the former exist, as elsewhere. This same condition of the skin is also a prominent symptom in ichthyosis, and is no doubt sometimes mistaken for that affection, even when occurring independently. The cases recorded here, however, were accompanied by no hypertrophy of the papillæ, which is the characteristic and essential lesion of ichthyosis, and the scaly condition of parts of the skin was due to accumulation of epidermal cells upon the surface, not to their excessive formation.

The few cases of affections of the sweat glands were of little interest. One of the cases of hyperidrosis was unilateral and partial. The cases of folliculitis, placed in the next class, were mostly inflammations of the tissues surrounding the glands, induced by excessive action of the sudoriparous glands (sudamina). They are not, however, primarily affections of the glands.

Class IV. Exudations (3561 cases). The great class of exudative diseases comprises, as will be seen, more than two thirds of the whole number of cases upon the list, and is divided by Professor Hebra into the acute and chronic, the dividing line being at pemphigus (Table II.). This division seems arbitrary, because some of the diseases in the first group are chronic in course at times, — some of the forms of urticaria and erythema, for instance, — while of the latter some may be acute both in type and in duration ; but on the whole, it is well founded. The first group is again divided into the contagious (the exanthemata), and the non-contagious.

The number of cases of exanthematous disease which find their way to the hospital is surprisingly small, but twenty-four cases in all having presented themselves at the skin department. That so large a proportion of these, twenty-two, were varicella seems stranger still, but can be explained, perhaps, by the facts that chicken-pox is not a "rash," that it is more variable and protracted in its period of efflorescence than the other exanthems, and that the eruption is more like that of some of the commoner skin diseases, and lasts longer than that of the others.

In the erythematous group there were seventy-three cases of erythema exudativum multiforme, eight of erythema nodosum, and one

hundred and thirty-two of urticaria. The cases of the first named were distributed about equally among men, women, and children, and amongst all ages. They were most various in kind and degree. The causes were mostly obscure, but in three of them copaiba gave rise to a general outbreak. In one of the latter the body was universally covered at first with a fine scarlet papular rash, with brilliant congestion of the mucous membrane within the mouth, so as to suggest an attack of scarlet fever until it was discovered that the patient was taking the drug. Erythema papulatum was observed in twelve of the cases, confined mostly to the hands, and in nearly all of them the disease had shown a marked tendency to recur at intervals of a year or more, and to a chronic course. Erythema nodosum occurred but eight times, and was confined mostly to the lower legs of young girls and children. The arms were affected as well as the legs, in three of the cases. In many instances erythema was intimately associated with urticaria.

Urticaria occurred twice as often with women as with men, and a large third of the cases were chronic. Only in a very few instances in either class was it possible to discover the cause of the disease, either in the action of specific excitants affecting directly the skin or organs of digestion, or in any special faults of the general economy. In a few it was secondary to other skin affections of an itching character, in which the patience of the cutaneous nerves had been long abused by scratching, and in others it was similarly induced by the harassing action of animal parasites upon the skin. Many of the patients were troubled by chronic disorders of various functions and organs, and many were anæmic and debilitated, but such troubles were not more noticeable in these patients than in those affected by other cutaneous diseases of equal frequency. Neither did the results of treatment throw much light upon the aetiology of the disease in its relations to internal disorders. In some cases, however, it seemed to have more than a chance connection with chronic disturbances of digestion. In a very large proportion of them the health was, with the exception of the urticaria, faultless in every way.

The relations of urticaria to the nervous system have, like those of most skin diseases, lately been much discussed. The grounds and methods of such agitation in general will be briefly and more appropriately considered when we come to the class *Neuroses*. Dr. Bulkley, of New York, has recently called attention to the connection of chronic urticaria with exophthalmic goitre as additional evidence of such relationship, as this rare affection, otherwise called Graves' or Basedow's disease, is supposed to be due to some disturbance of the sympathetic system. He published two cases of this sort in *The Chicago Journal of Nervous and Mental Disease*, October, 1875. To these may be added a similar case from the list of patients with urticaria.

Chronic Urticaria with Exophthalmic Goitre. — The patient was an Irish girl twenty-six years old. She had always been well and strong until 1871, when she took a severe cold, which was followed by a very hard cough and repeated haemoptysis of three months' duration. She then gave up work and remained in bed, after which the haemorrhages ceased and the cough gradually disappeared. During this time her lungs were examined, but no positive signs of disease of their tissues were discovered. With the cessation of the pulmonary symptoms, there came on incessant nausea and violent vomiting whenever anything was eaten or drunk; this lasted five months. At the same time she began to have severe palpitation, paroxysmal in character, and aggravated by emotions. She then noticed for the first time that her eyes were more prominent than usual, and thinks that they were forced out by straining in vomiting. Her neck also became larger than before. During this time she was seen by several physicians, but they failed to find any structural disease of the heart. The obstinacy of the vomiting led to the examination of the urine, and it was found to contain "albumen and casts," so that the symptoms were referred to disease of the kidneys. She went into the country and slowly recovered from the vomiting and partially regained her strength. During the last three years there has been little change in her condition, the most prominent symptom having been nearly constant palpitation, stimulated by emotional causes at times to the sensation of impending death. The condition of the eyes and neck has not changed in the same period. In April last, ulceration of the skin of the right lower leg took place, for which and for her general state she sought relief at the hospital. She was examined by Drs. Hayden and Knight, and mitral regurgitation and enlargement of the heart were recognized. The urine was examined and found normal.

In August, urticaria for the first time manifested itself as a general outbreak, for which she was referred to the skin department. The patient presented a startled, anxious look, and was pale. Her eyes were very prominent, and had a staring expression. Pear-shaped, flattened protuberances were seen on either side of the front neck, diminishing in size as they extended from the junctures of the clavicles and sternum upward and backward nearly to the angles of the jaws. They were soft to the touch, and when squeezed gave the patient the feeling that the "eyes were coming out of her head." The neck measured thirteen inches in its largest circumference. The urticaria exhibited itself in the form of medium-sized wheals, with occasional erythematous patches. It affected all parts of the surface, including the head. It came at all times, most frequently mornings and evenings, and apparently quite independently of diet or other appreciable agents. The attacks lasted, too, for quite variable periods, and were sometimes absent

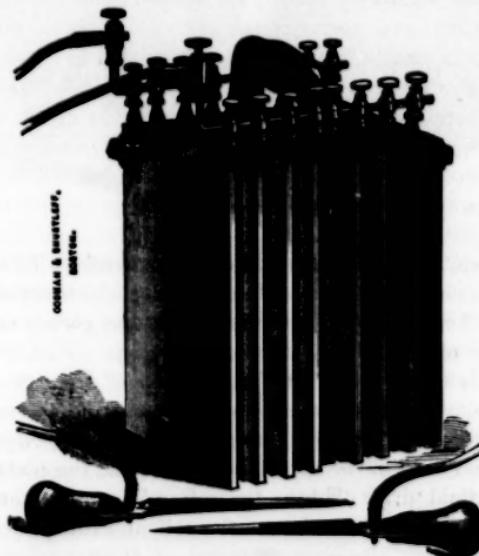
several days. The general condition of the patient was pretty good for one with so serious an organic disease of the heart. Her digestion was correct and the menstrual function regular. She was very easily startled, and the palpitation and tumultuous action of the heart then became distressing, but ordinarily, and when quiet at home, she was very comfortable. A tonic and an antipruritic wash were prescribed.

Since her first visit, her condition has remained without material change. She thinks that the severity of the attacks of urticaria are controlled to some extent by the use of the wash, and that the intervals between them are somewhat longer, sometimes extending to two or three weeks.

NEW ELECTRODES AND BATTERY FOR ELECTROLYSIS OF UTERINE FIBROIDS.

BY E. CUTTER, M. D., OF CAMBRIDGE, MASS.

(1.) *Arrangement of Plates.* — Figure 1 shows the plates, namely, eight carbons, each one fourth of an inch thick, six inches wide, and nine inches long, and eight zincs, each one eighth of an inch thick, six inches wide, and nine inches long. The carbon plates are very brittle, and very easily broken by a slight blow or jar, and thus are liable to entirely

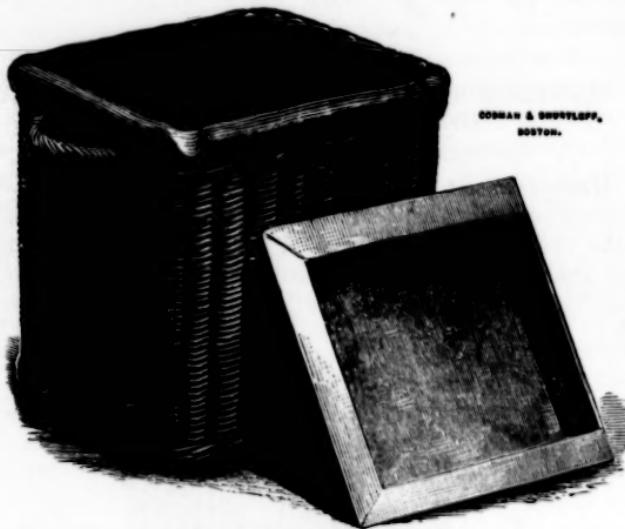


(Fig. 1.) Battery and Electrodes.

disable the battery. To obviate this, the zincs are placed on the outside, and project slightly beyond the carbons. This prevents any direct blow or jar upon the carbons. Both the carbons and zincs are set on the six-inch end (Figure 1), and are perforated by three foramina, two at the

angles at the top end, and one at the middle of the bottom end. Three cylinders of hard rubber pass through these holes, each plate being separated by rings of hard rubber, and holding the copper connections close to the plates. The ends of the cylinders are terminated by threads, on which nuts are placed; when the latter are screwed tightly they hold the plates in one compact mass. A handle springs from the midst of the plates, the two upper cylinders running through its extremities. The rest of the battery is like others of this variety.

(2.) *Rattan Cell.* — Figure 2 represents the cell and tray. The cell



(Fig. 2.) Rattan Cell and Tray.

is made of sheet lead surrounded by rattan work. This secures an elastic basis which is very light and strong, and which resists shocks admirably. The lead lining is continued up at one corner into a spout, for convenience of pouring out the exciting fluid. The tray is of tin. One side of it is square; this is for the purpose of drainage. After use, the plates are elevated to the top of the cell; a nut at the bottom of the plates is caught upon the edge of the cell. The square edge of the tray is then put under the zinc of the opposite side, and the plates are firmly held while the fluid drips off into the cell. When dry the plates are lifted off, the tray is placed on top of the cell, and the plates are placed upon the tray.

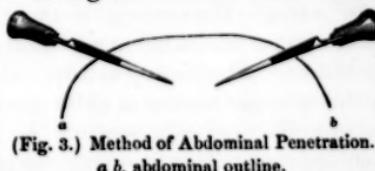
The cell is graduated in height to the plates, so that the fluid cannot immerse the plate connections. The advantages of the plates being immersed from the small or six-inch end are that less floor space is occupied, and less space is lost on the connecting end by projection above the

fluid, than if the plates were immersed on the large or nine-inch end. When less than the full amount of active battery surface is desired, less fluid may be poured into the cell. Simplicity has been studied in this battery without leaving a chance to break off the contacts of the connections, as may be seen in the cut. The two upper hard-rubber cylinders go through (1) the zincs, (2) a hard-rubber washer, (3) a connection, (4) a carbon, and so on.

The plates are easily detached by unscrewing the nuts of one side and drawing out the cylinders. They may then be cleaned and amalgamated.

Solution. — Any solution used for any battery will excite this battery. The fluid used and preferred is a saturated solution of potassic bichromate and a pound of sulphuric acid to two gallons of the solution. This strength of solution will run the battery for twelve hours. If desired, the fluid may be agitated during use by the pumping in of air from an india-rubber bulb. After the battery has been used for some time it is a good plan to soak it in water overnight. This may be done in the cell or in a bath-tub. Besides these there should be provided a stone jug, or better a glass demijohn, of two gallons' capacity; also a tunnel. It is astonishing how readily this fluid will exude through a common stone jug.

Electrodes of the Writer. — The ordinary electrode is a six-inch needle tipped with platinum. In the first operation it was impossible to introduce it into the dense fibroid over one and a half inches. The tissues tightly bind all along the periphery of the cylinder of the needle, causing the needle to twist in the hand and shorten on its own long axis instead of penetrating the tumor. Dr. Kimball, my associate, said that either a new electrode must be devised or the operation given up. It did not suit me to abandon the operation, so my ingenuity was set at work, and an electrode of steel, twisted like a corkscrew and gilded, was made, under the idea of having the twist all made beforehand. It was a failure. The electrode here figured (Figure 3) was then invented. It consists merely of an ordinary director sharpened at point and edges, fitted with a handle and partly japanned. The



(Fig. 3.) Method of Abdominal Penetration.
a b, abdominal outline.

angle of the two sides of the director was made blunt. The idea aimed at was that the tension of the blunt angle would draw the tissues over the sharp free edges of the electrode. The tighter the tension the more it would cut; hence the friction would be relieved. Experience has verified the prediction, and no tumor has yet been found which the electrode does not readily, steadily, and directly penetrate. The success of this operation depends upon these electrodes. The most disagreeable part of the operation is thus done away with. For a twisting, yielding,

cylindrical electrode is a most uncertain and vexatious means of penetrating tissues that are as hard as a bullock's testicle. Figure 3 represents the depth to which these electrodes are pushed through the abdominal walls, peritoneum and all, into the tumor. The conductors are of copper wire, terminated with brass tips, and covered with worsted knit goods. They are about six feet in length.

Quantity and Intensity. — The intensity of this battery is not great. The quantity is large. I had some difficulty in estimating the quantity of galvanic fluid produced by this arrangement until Prof. M. G. Farmer, the celebrated electrician, kindly offered to measure it. He had some electrometers with which he measured the powerful batteries used to explode torpedoes at Newport, R. I. On connecting the conductors with the electrometer the needle went immediately up to 90°, the limit of the instrument! The professor stated that he should have to make an electrometer purposely, *as he had none large enough to measure the battery.* From this authority we conclude that in this battery we are dealing with no inconsiderable amount and quantity of galvanic current. This, being the constant (galvanic) current, is not perceptible to the senses. The same surface action with a broken (faradaic) current would probably kill a patient instantaneously. The writer is greatly indebted to Codman and Shurtleff for the thorough manner in which they have made this battery, and the moderate price (forty-five dollars) at which they afford it.

The Method. — This account would be quite incomplete without a brief allusion to the operation. The patient being anesthetized, one electrode is introduced at one part of the tumor on one side of the abdomen to the depth of four inches at least (Figure 3). The other electrode is similarly introduced on the other side. The points of the electrodes as well as the electrodes themselves should not touch each other, else a thermic effect would be produced. In no case should the electrode become warm. The current is then passed through for five minutes, sometimes for fifteen minutes. Cloths wet with alcohol are placed upon the abdomen after the operation. Morphia is sometimes administered by the skin, and veratrum viride is sometimes given. Usually the immediate effects of pain pass off in a few hours. Rarely has peritonitis been induced. This immunity is one of the remarkable features of the operation. One would naturally expect peritonitis with effusion of pus, but it seems as if the galvanic current had some peculiar power in preventing the ordinary results of abdominal traumatic inflammation. In one case only has there been pus following the punctures.

The *object* of the operation is to arrest the further development of the fibroid. The *results* in about twenty-five cases are as follows: In two cases of tumor, the growth, eight inches by ten, entirely disappeared with only three applications each. In several instances the growths have

been reduced over one half. In one of these, in which the patient was as large as a woman seven months pregnant, the tumor is now imperceptible to an outside observer. The patient had been obliged to abandon her work of teaching, but has now resumed it. Two women said that for two years they had been unable to cross their lower limbs ; now they can do so without difficulty. One woman, who had been bedridden, after two operations was able to be about the house ; after the third she went visiting, with the tumor one half disappeared. In more than four fifths of the cases the growth has been arrested, which was all that was aimed at. In three cases no effect has been produced. In nearly all there has been improvement in the general health, the patients have gained flesh, and have been freed from pain, difficult micturition, and nocturnal colic. In several instances females who have given up this life and awaited death, have been restored to the full performance of the active duties of healthy living. In many cases of the stony, hard variety of tumor there has been a cheesy softening of the part punctured. In one case, where the fibroid was central and involved the whole uterus, the first operation was followed by a cessation of menorrhagia and by a large discharge of black, thin detritus from the vagina. On the successive operations the electrodes entered what appeared to be a large central cavity. This case has done well ; the tumor remains diminished one half, and there has been a general restoration of health. Ascites and anasarca entirely disappeared after the first operation in one case. In another instance the general health much improved ; pains disappeared ; the tumor became smaller ; the patient gained flesh and strength ; she is now able to work hard all the time, whereas before this was impossible.

In the descriptions in this paper the term electrolysis is used for want of a better word. The ordinary signification of electrolysis is the decomposition of tissues or fluids by the action of a constant (galvanic) current of electricity. This is attended by the evolution of oxygen gas from the positive electrode and hydrogen from the negative electrode when water is decomposed by electrolysis. In the present case a very large quantity of constant current is passed through the fibroid. No heat, no evolution of gas, or shock attends the passage. The effects are manifested by the physiological results only, softening, reduction, and disappearance. Dr. J. R. Nichols thinks the current may act by producing ozone. What it does I know not. I think no one can tell, and it is an open question whether the galvanic current has anything to do with it ; or, in other words, whether the results would not be produced by the punctures without the electricity. At any rate, at present the term electrolysis must be retained as sufficiently explicit to signify the passage of a large quantity of galvanic current from over a dozen square feet of excited surface of the plates in the battery.

The future of this operation is yet to be written. If it should be followed by relief from pain, improvement in general health, and arrest of abnormal development, we believe that its prosecution is legitimately within the province of the gynæcologist. In order to obviate misunderstanding, it is proper for the writer to state that Dr. Gilman Kimball has operated by far the larger number of times, and it is to his energy, perseverance, and boldness that the present status of the operation is largely due. The mechanical and chemical details have been the study and care of the writer.

In closing, a word of caution is added that one should be sure that his case is one of fibroid, else the operation may prove disastrous.

RECENT PROGRESS IN OBSTETRICS AND GYNÆCOLOGY.

BY W. L. RICHARDSON, M. D.

OBSTETRICS.

Management of Lactation.—In this,¹ the first of a series of monographs which Dr. Fleischmann proposes to publish on matters relating to children, the author gives a great many interesting facts concerning the management of lactation. The profession and laity have held very exaggerated views as to the influence which menstruation exerts on lactation. It is this part of the work which chiefly concerns obstetricians. The author reports in detail the results obtained by an examination of six hundred and eighty-five nursing women. Of these, four hundred and two menstruated while nursing. Of this number 10.2 per cent. began to menstruate within four weeks after confinement; 24.6 per cent. menstruated within six weeks, and 11.4 per cent. within twelve weeks. In more than one third of all the cases the catamenia reappeared in from four to five weeks after delivery. By an examination of a table of the exact times at which the catamenia appeared in a large number of nursing and non-nursing women, it would appear that while in more than one half of the latter the catamenia appeared during the first six weeks, only one in four of the former menstruated during that same time. During the first three months following confinement 71.65 per cent. of non-nursing women menstruated, while only 45 per cent. of those who were nursing menstruated thus early.

The following interesting table shows that weaning is followed by a return of menstruation at about the same period as would occur in women who did not nurse at all:—

	After Child-Birth.	After Weaning.	While Nursing.
6 weeks.....	52.82 per cent.	44 per cent.	24.63 per cent.
6-12 weeks.....	18.83	16	20.47
12 weeks-1 year.....	4.85	6	31.84

¹ Klinik der Pädiatrik. Dr. Ludwig Fleischmann. I. Die Ernährung des Säuglingsalters dargestellt auf wissenschaftlicher Grundlage. Wien. 1875.

Immediately after weaning, the character of the milk becomes greatly changed, as appears from the following table : —

	Nursing.	Forty Hours after Weaning.
Water.....	858 per mille.	901.1 per mille.
Solid matter.....	142	98.9
Casein.....	13	1.9
Butter.....	36	34
Sugar.....	78	58.5
Salts	45	4.5

As regards the effect of menstruation on the milk, it would appear that the latter does not, as is usually supposed, become more watery and poorer in solid constituents, but, in reality, richer in salts, butter, and casein. If the child is nursed as frequently after menstruation appears, it is possible that disturbances of the digestion may result, namely, restlessness, colic, diarrhoea, etc. These, however, are of slight importance, and a careful regulation of the diet will suffice to remedy the difficulty without weaning.

The milk varies according to the period of lactation. The first few days after birth it is richer in butter than later, and possesses a purgative action. The secretion of true milk becomes established by the end of the eighth day, although colostrum-corpuscles are noticeable during the whole of the first month. The amount of casein increases progressively until the second month, after which it remains constant until the tenth month, when it begins to diminish. The butter increases slightly until the third month, and from the fifth it decreases. The amount of sugar increases steadily until it reaches the maximum amount between the eighth and the eleventh month. The solid constituents increase until the third month, after which they diminish. During the first two months the milk is most nourishing, although from the third until the twelfth month its value as a diet remains pretty constant.

Continued nursing after conception has taken place is injurious for several reasons. In the first place, the nourishment of the mother is naturally interfered with, and this of course reacts upon the child, and may do so to such a degree that a miscarriage may be the result. Secondly, the child is injured by the milk either ceasing or coming to resemble the colostrum in its composition. The solid constituents of the milk are gradually diminished as the pregnancy advances.

As regards the effect which diseases have on the milk, several facts are important. In all cases where the mammary ducts themselves are inflamed, the milk is found to resemble colostrum. In all diseases the solid constituents increase, while the amount of water diminishes, and this is especially true with reference to all chronic diseases. Owing to this change, disturbances in the digestion of the milk are noticed in those babies who are nursed by mothers who are sick. In light cases of puerperal disease the milk shows such a slight alteration that no

change need be made in nursing, but when the disease is well marked the child should be taken away from the breast. In cases of syphilis, the solid constituents are greatly increased in amount.

Vomiting of Pregnancy.—Dr. T. Fairbank reports¹ that by far the most reliable remedy he has ever used for controlling the obstinate vomiting of pregnancy is dilute phosphoric acid. He administers it in doses of from thirty to sixty minims in a wine-glass of water, two, three, or five times a day, as occasion may require. He considers it of special value in those cases in which the nausea becomes extreme at the sight of food. In those cases he always orders it to be taken before meals.

Dr. Pitoris gives² the account of two cases in which the vomiting occurring during pregnancy yielded at once to hyoscyamia, when all the usual remedies had been tried without any beneficial effect. The dose was a teaspoonful every hour of a mixture containing one twelfth of a grain of hyoscyamia in four ounces of some agreeable liquid used as a vehicle.

Pregnancy and Labor in Epileptics.—Dr. John S. Parry contributes a most valuable paper³ showing the deviations from a normal pregnancy and labor which may occur in women who are subject to epileptic seizures. According to his experience, and the knowledge which he has gained from the study of cases which have occurred in his own practice, he believes it to be satisfactorily proved that, as a rule, epileptics rarely have epileptic seizures during labor. They are not more liable to puerperal convulsions than other women. The labor is as likely to progress favorably in all respects with them as with other women. Pregnancy may be the immediate cause of epilepsy. In these cases, however, an epileptic fit rarely occurs during the labor, and the disease is immediately arrested by parturition. It will almost always reappear whenever the woman again becomes pregnant. In the exceptional cases in which violent epileptic convulsions occur during labor, it is as yet a matter of doubt whether it is best to hasten delivery or to trust to nature. Either form of epilepsy may result in the death of the foetus, but convulsions of this kind are not as likely to destroy the child as those which are correctly designated as puerperal.

Hydrate of Chloral in Obstetric Practice.—Dr. H. Chouppe gives⁴ an analysis of a large number of cases, reported by various authorities, in which chloral has been employed during the progress of labor. He gives also the experience which he has had, himself, in the use of this drug as an anæsthetic during parturition. His results may briefly be summed up as follows: chloral is capable of producing well-marked

¹ British Medical Journal, November 20, 1875.

² L'Union médicale, September 14, 1875.

³ American Journal of Obstetrics, August, 1875.

⁴ Annales de Gynécologie, May, 1875.

cutaneous anaesthesia. It can entirely relieve the pains of labor. Even when given in such large doses as to bring about a complete state of anaesthesia, it does not diminish the contractility of unstriped muscular fibres, including the uterus. Occasionally the pains of labor are rendered less frequent, but in such cases their force is correspondingly increased, or in other words the duration of the labor is in reality shortened. In those cases where the patient has become irritable or fatigued by a prolonged labor, in which the uterine contractions are diminished both in frequency and in force, owing to what may very properly be called *inertia uteri*, the administration of chloral to such a degree as to produce complete anaesthesia will almost invariably restore tone to the uterus, and thus, by reestablishing the frequency and force of its contractions, speedily bring the labor to a successful termination. The administration of chloral as an anaesthetic has no injurious effect whatever on the child.

The use of the drug is especially indicated in tedious labors and with primiparae, inasmuch as it is rare to find such severe pains in multiparae as in primiparae. Hysterical and nervous patients are especially benefited by the use of chloral. It should be given after the first stage is completed and the expulsive pains have begun. In rare cases its use may be found advantageous during the first stage. It is best to obtain a solution so made that a teaspoonful of the mixture shall be equivalent to fifteen grains. The syrup of gooseberry is an excellent vehicle, as it effectually destroys the disagreeable after-taste of the chloral. The dose of the chloral should vary from one drachm to one and a half drachms given in two doses with half an hour's interval; or it may be given, when we do not wish too rapid an effect, in fifteen-grain doses every fifteen minutes. When its administration is followed or preceded by vomiting it should be given *per rectum*. Its use hypodermically is altogether too dangerous to be advised.

Puerperal Fever.—As a prophylactic measure Dr. J. H. Miller¹ regards it of the utmost importance that a speedy contraction of the uterus should follow delivery. By such contraction the mouths of the uterine veins are securely closed, and there is accordingly much less danger of any absorption of any poisonous material. With this end in view he advises the administration of the fluid extract of ergot in half-drachm doses thrice daily for the first three days, and twice daily for ten days longer. With the same idea of preventing any poisonous absorption he occasionally washes out the vagina with tepid water containing a small amount of carbolic-acid. He also advises the free use of a weak carbolic-acid solution on napkins about the genitals.

As an abortive treatment of threatened puerperal disease, he believes strongly in quinine. He administers it as soon as the very earliest

¹ *The Medical Record*, August 3, 1875.

manifestations of the disease are detected. Ten grains every four hours are sufficient, in his opinion, to produce the reappearance of favorable symptoms within twenty-four hours.

Temperature in Puerperal Eclampsia. — Dr. Bourneville reports¹ the results of a careful examination of a number of cases of puerperal convulsions which he has had the opportunity of observing. During a convulsion the temperature rises from the beginning to the end of the seizure. In the intervals, the temperature remains somewhat higher than normal, an upward tendency being noted at the moment of seizure. If the case terminates fatally it will be noticed that the temperature is constantly rising, although in the intervals between the seizures a slight decline will be indicated by the thermometer. If, however, the case is to terminate favorably, there is a constantly decreasing temperature with slight elevations during the actual seizures.

As a means of furnishing a differential diagnosis between uræmia and puerperal eclampsia, the thermometer will be found of great assistance. In all cases of true uræmia, whether it occurs in males or females, whether it owes its origin to an affection of the kidneys or to an obliteration of the ureters, whether it assumes the comatose or the convulsive form, the temperature will be found to be progressively lowered, the point reached being sometimes very low. From the very first there is always a lowering of the temperature in uræmia, and an elevation in puerperal eclampsia. In the course of uræmia the temperature is progressively lowered, while in the course of the eclamptic state it rises quite rapidly from the very outset. These differences are accentuated at the approach and even at the moment of death; in uræmia the temperature descends very low, even far below the normal point, while in puerperal eclampsia, on the contrary, it reaches a very high figure.

Dr. Portal gives² three cases of puerperal convulsions, in all of which the use of chloral was followed by the most favorable results. In all the cases albuminuria existed. In one of the instances the convulsions came on six hours after the termination of the labor; in the other two, the attack occurred during the delivery. In one case the patient was delivered of a still-born child during the attack; in the second, the pains ceased on the occurrence of the convulsions, and the patient was delivered with forceps. The first patient had twenty-four convulsions, occurring at intervals of about fifteen minutes; the second had eight, and the third seven seizures. In each instance ninety grains of the hydrate of chloral were given. In the last two cases also a quarter of a grain of morphia was injected subcutaneously. All the cases terminated favorably.

Milk Diet in the Albuminuria of Pregnant Women. — Dr. Tarnier³

¹ British and Foreign Medico-Chirurgical Review, October, 1875.

² Bulletin Générale de Thérapeutique, August 15, 1875.

³ Le Progrès Médical, December 11, 1875.

gives the account of two cases in which pregnant women suffering from albuminuria were treated with a milk diet, and with the most favorable results. In both cases no other treatment was used. The first day two portions of food were allowed, with about a quart of milk; the second day, only one portion of food and a little over two quarts of milk; the third day, half a portion of food and three and a quarter quarts of milk; the following days four and a half quarts of milk were allowed, or even more when the patients desired it, but no other food was given.

Within two weeks after this method of treatment was begun, a decided improvement in all the symptoms was noticed. The albuminuria had decidedly decreased, as had also the oedema of the lower extremities. This improvement continued until the urine no longer showed any traces of albumen. In both cases the pregnancy terminated in the birth of healthy living children, the labor and convalescence of the mothers being perfectly normal.

Puerperal Inflammation of the Ilio-Sacral Articulations. — Dr. Ebell reports¹ two cases in which a puerperal inflammation of the ilio-sacral articulations followed delivery. The first was a primipara, twenty-four years of age, with a contracted pelvis; she had been delivered with forceps. A low type of inflammation of the joint soon manifested itself, followed by necrosis. The patient died as the result of exhaustion. The second case was that of a patient thirty years of age, who was seized the seventh day after delivery with a severe pain in the left hip. She gradually found herself unable to walk, and was for a long time confined to the bed, being obliged to lie on the right side, with the left thigh adducted and rotated inwards. The soft parts of the joint became swollen and flabby, and an examination per rectum established the diagnosis of inflammation of the sacro-sciatic articulation. A complete recovery followed the use of tincture of iodine externally, combined with compresses of cold water, and rest.

PROCEEDINGS OF THE BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

F. B. GREENOUGH, M. D., SECRETARY.

DECEMBER 27, 1875. *Disease of the Knee-Joint; Synovial Tumors in the Popliteal Space; Free Incision into the Joint, and Cure.* — DR. FIFIELD exhibited a cast of a leg showing a tumor of the calf caused by the gradual distention and descent of a so-called cyst of the popliteal space. The cast had been previously shown to the society, he said, and an account of the case published in the JOURNAL of February 6, 1873. He again brought up the subject for the reason that since this period the writings of Mr. Robert Adams

¹ *Berliner klinische Wochenschrift*, September 27, 1875.

on rheumatic gout had appeared, in which this subject of popliteal cysts in rheumatic arthritis had been more fully and thoroughly discussed than had then been done by any writer in the English language. It was in view of this further discussion of the topic of popliteal cysts that Dr. Fifield reopened the subject.

The case of the man who was the subject of the tumor shown by the cast might be briefly stated thus: He was sixty years of age. He had had for the last twelve years chronic dropsy of both knee-joints; the distention was very great. In October, 1868, both joints were punctured with a common trocar, and the liquid, amounting to several ounces, was drawn off. The joints were then injected with tincture of iodine and water in equal parts. This proceeding was repeated three times. The last time, tincture of iodine of full strength was injected; some pain followed, and there was some inflammation, but not enough to cause a radical cure.

In the summer of 1870, after a slip on the stairs, the patient noticed a small rounded tumor in the left popliteal space, and soon afterwards another in the right. That in the left increased very rapidly, so that at the close of the autumn of 1870 it extended seven or eight inches below the joint and entirely across the upper back part of the leg, and was more than twice as large as the fist, smooth on the surface, and distinctly fluctuating. The tumor was punctured, a good deal of yellow, oily liquid was obtained, and some masses resembling bits of hard, yellow fat came through the canula. Violent pain followed. The patient became typhoidal, and three days later the whole cyst was laid open from one end to the other. The same oily-looking liquid escaped, together with handfuls of hard, yellow masses having the odor and appearance of commencing gangrene. On the following morning the typhoid condition had passed away. The extensive wound healed in a sufficiently short time by granulation. At the expiration of three or four days from this operation the knee-joint became exquisitely tender and painful; the patient again became typhoidal and prostrated. A free incision was therefore made into the joint, and a large amount of pus was evacuated. Again the patient rallied, and his health became re-established. The joint continued to discharge pus, however, but by the use of occasional injections of iodine this was at length controlled. The limb, which had been kept in a straight position, was now strongly flexed, and the fibrous adhesions yielded with a tearing sound. The patient, being an ingenious man, contrived an apparatus for alternately flexing and extending the limb, and eventually recovered with a very useful leg.

In the winter of 1871-72, the cyst in the right popliteal space having attained a large size and the knee-joint being greatly swollen, an incision was made into the cyst. After evacuating the liquid, free bleeding took place from the edges of the cyst, and it being impossible to find any vessels to tie, it was finally checked by the use of a solution of ferric alum. The knee-joint was now injected (directly and not from the cyst) with tincture of iodine of full strength; this was without effect, although the injection was allowed to remain in the joint. A seton was passed through the joint and allowed to remain twelve hours. At first this seemed ineffectual, but at last, characteristic pain and tenderness appeared, and the joint was laid open with the knife.

This time, troublesome bleeding occurred from the edges of the cut. Suppuration became freely established, and, soon after, the cyst in the ham inflamed, broke, and discharged abundantly, thus reversing the case of the first cyst and joint. The patient speedily recovered, and now has two useful legs.

Here the subject has rested until now. It will be noticed that the expression "popliteal cysts" is used in this report as descriptive of the tumors in the popliteal spaces; it will presently be discussed whether this term is strictly correct.

Mr. Adams, in his work to which allusion has been made, has, at page 452, as the heading of a section, these words: *Bursal Tumors presenting themselves in the Ham, symptomatic of Rheumatic Gout of the Knee-Joint.* He says, "In the normal state there are to be found in the popliteal space five synovial bursæ: namely, three small ones, placed externally, near to the outer ham-string; two, more important, placed close to the inner margin of the region. Of these, one is small, not larger than an almond, situated inferiorly, and belongs exclusively to the semi-membranosus muscle; it does not communicate with the interior of the knee-joint. The other, the larger bursa of the semi-membranosus, is situated superiorly to that last mentioned. When inflated it is the size of a small hen's egg, is of an ovoidal form, its greatest diameter being vertical. This, the largest of the two, is placed between the semi-membranosus and the internal gemellus, where these muscles decussate from each other. In the adult it usually communicates with the interior of the knee-joint. It appears to be formed into a multilocular cavity, and the opening by which it communicates with the knee-joint is of a valvular nature, i. e., when either the joint or bursa is distended allowing fluid to pass freely between the two, providing the knee be flexed."

Mr. Adams goes on to remark, "Many years ago I publicly expressed my opinion that this larger bursa of the semi-membranosus was frequently developed into a bursal tumor which presented itself in the popliteal space, and that such swelling in this situation thus formed was *very* usually found to be associated with well-marked symptoms of rheumatic gout in the corresponding knee-joint." Mr. Adams refers to a clinical lecture of the late Sir William Lawrence during the winter session of 1837-38, as the first communication to the profession of there being any such disorder as bursal tumor of the ham."

Mr. Adams claims that thirty years ago *he* "accurately described the external signs and symptoms, as well as the anatomical characters, of these bursal tumors symptomatic of chronic rheumatic arthritis." The words of the text of the London Cyclopaedia of Anatomy and Physiology in the article on Abnormal Knee are, "A tumor about the size of a small hen's egg is seen projecting into the popliteal space. This tumor reaches toward the inner head of the gastrocnemius muscle. We have known several cases of this disease in which this dropical condition of the popliteal bursæ existed as one of the symptoms of rheumatic gout, and, the patient having had this chronic disease in both knee-joints, the dilated bursæ were seen in both popliteal spaces, presenting in each case on a superficial inspection the resemblance to one of double aneurism." "Subsequently," says Mr. Adams, "to the publication of Sir William Lawrence's clinical lectures on Cysts of the Ham, and to the

publication of his own observations on the same subject, we do not find any notice taken by any writer in these islands as to such lesions for ten years after, that is to say, until 1850, when Sir Benjamin Brodie alluded to them in the fifth edition of his work on the joints." Now the chronic rheumatic arthritis with which Mr. Adams says this bursal tumor is very usually connected is "marked at its commencement by pain, heat, and swelling, and the effusion which accompanies these manifestations gradually increases in quantity, the bursa receiving the overflow. In the later stages of the disease the synovial fluid becomes absorbed, and the patella falls back on the trochlea of the femur." If this is an established fact, it is a very important one. The operations of McDonald, Velpeau, and others for the relief of hydrarthroses by the injection of iodine are to be condemned as exposing the patient to risk when the cure of the effusion is only a question of time from natural causes. The operation practiced in the case cited may also be placed in the same category. A patient may be allowed, however, to elect in the matter if he prefer speed to safety. Although the larger bursa of the semi-membranosus has not unfrequently been opened after mistaking it for a fatty tumor, the operation being followed by death in one case, there seems to be no record of any case similar to the one cited at the commencement of this paper, and certainly none treated in a similar way, namely, first by long incision of the bursa or cyst, secondly by free incision of the joint, or of a knee-joint purposely inflamed after failure of incision of the cyst to effect such purpose, and then freely opened, the cyst or bursa subsequently inflaming and suppurating. In the case of Sir William Lawrence, he says the patient became typhoidal, the wound and knee were easy, but there appeared to be a general tumefaction of the latter. Does it not seem that had the joint been freely opened the patient might have been saved? Mr. Adams's attempts to connect the enlarged bursa of the ham with his favorite chronic rheumatic arthritis look a little overstrained. Such enlargement is not very unfrequently seen where no symptoms justify one in establishing this relation. Foucher, in his *Mémoire sur les Kystes de la Région poplitée*,¹ gives only six cases, out of nineteen of enlarged popliteal cysts, in which such complication or connection existed. Mr. Adams says that he has seen several such cases, and gives but one in detail. He marshals Sir William Lawrence's three cases of enlarged cysts, but he seems to have forced Sir William's third case, like a reluctant recruit, into the ranks. In regard to size, neither Mr. Adams's case nor Sir William Lawrence's nor those of Foucher seem comparable with the one shown in the cast. Sir William's first case showed a tumor as large as a medium-sized orange.

The remaining or lesser bursa of the semi-membranosus may be briefly considered. It is stated by Adams, Foucher, and others to have no communication with the knee-joint, and Mr. Adams attributes the happy result of Mr. Poland, of Guy's Hospital, in a case in which he incised a tumor lying behind the inner hamstring, to the fact that it was this smaller bursa, belonging exclusively to the tendon of the semi-membranosus, which was opened, and which had no communication with the joint; but Dr. Fifield here exhibited a plate

¹ *Archives générales de Médecine*, 1856, ii. 313-425.

contained in the work of Alexander Monro, published in 1788, wherein both the larger and the smaller bursæ of the semi-membranosus, were shown. The opening into the joint from the larger is seen, with a probe passed through. From the smaller an opening is also seen leading to the larger, a probe passing through it. It would seem that nothing positive can be stated of the communication of either bursa with the joint, or with its fellows, but age has a great bearing on the probabilities of this communication existing. Foucher says, "Now it appears to me that such communication, that is, of the larger bursa and the knee-joint, does not exist in youth, although the synovial sac of the tendons may be well developed; but, on the contrary, in the adult, and especially in the aged, such communication is almost constant. This appears to be due to a wearing out of the wall of the sac under the influence of the rubbings of the condyle of the femur against the capsule. Monro, in his plates, shows several bursæ of different parts of the body with holes worn in them.

Mr. Adams seemed to imagine that he was the first to call attention to a connection of the popliteal bursa with chronic rheumatic arthritis; but Monro in 1788 writes, "Thus, in rheumatic and gouty constitutions, the joints are often swelled, but when we attend narrowly to the seat of such swellings, we shall generally discover an effusion into the bursæ as well as into the cavities of the joints." Again he states, "Dropsey of the joint of the knee is a more common and a more curable disorder than I believe it is commonly supposed to be. I have kept an account of fifteen patients under this complaint, of whom eleven were completely cured by the use of blisters, and a solution of sal plumbi in vinegar, and purgatives. In two more of the number, an effusion into the joint has continued for several years." Mr. Adams, as we have seen, states that the absorption of the fluid is a stage in the natural march of the disorder, whether it be earlier or later. Monro further remarks what is nowhere else stated: "In several cases of the knee with fluctuation I have found that the fluid was lodged in the bursa behind the tendon of the extensors of the leg, and I have observed that such tumors are apt with time to terminate in an imperfect suppuration, where some purulent matter is mixed with a clear viscid liquor."

The three smaller bursæ, placed near the outer hamstring, are said to be thus situated: one behind the tendon of the popliteus muscle, one under the outer head of the gastrocnemius, and one immediately below the popliteal bursa, but more superficially, between the tendon of the biceps near its insertion and the external lateral ligament of the knee. Of these three bursæ, Foucher and Adams declare that none communicates with the knee-joint, or has any connection, consequently, with hydrarthrosis; but Monro figures, in a large plate, "a portion of the popliteus muscle, . . . and a bursa under it communicating with the cavity of the knee-joint," and shows a probe passed through it.

The word "cyst," as applied indiscriminately to the tumors containing fluid found in the popliteal space, seems misleading, if not absolutely incorrect. Foucher gives the following varieties: (1) Dropsey of the bursæ; (2) dilatation of the synoviparous follicles, or follicular cysts; (3) the free serous cyst, which may comprise two kinds, the cyst primarily and the cyst consecutively

free; (4) the hernia of the articular synovia. It would seem advantageous to confine the use of the word "cyst" to the third variety. Of the cysts ~~consecutively~~ free, it may be remembered that before their emancipation from the pedicle which attaches them to the synovial, they may communicate with the joint.

The danger of incision of the bursae or cysts of the popliteal space would seem to be overestimated by Mr. Adams, particular reference being made to the bursae of the semi-membranosus. The two cases in which Malgaigne attempted to dissect out the bursa of the semi-membranosus did well at length, as have many in which incision, puncture, or puncture and injection have been practiced.

Dr. Fifield spoke, in conclusion, of a consequence of incision as stated in the case given at the beginning of his remarks, namely, hemorrhage. In the case of Sir William Lawrence, where the error of mistaking an enlarged bursa for a fatty tumor had been committed, bleeding set in an hour or two after the operation, and about twenty ounces of blood were lost before it could be arrested. In any similar operations this risk should be borne in mind.

JANUARY 10, 1876. *Fat-Embolism of the Lungs.* — DR. FITZ referred to a case of Dr. Cabot, recently examined at the Massachusetts General Hospital. A laboring man, aged twenty-three, addicted to liquor, was brought in from Lawrence with a fractured thigh. The bone was broken at the upper third, and there was an extensive ecchymosis on the outside of the thigh and hip.

The patient passed an easy night, but on the following day was quite feeble, with a quick pulse, 148 in the minute. Eight days after his entrance he died. His symptoms during this interval were prostration, rapid and weak pulse, moderately accelerated respiration, slight cough at the outset, and sleeplessness, for which morphia, chloral, etc., were given.

Four days after his entrance he became actively delirious, and towards the end constantly disarranged the splints.

At no time were the rational signs of pneumonia prominent, but at the autopsy there was found double pneumonia of both lower lobes.

In many of the branches of the pulmonary artery, both of the hepatised and the aerated portions of the lungs, fat drops were found which could be readily forced into the net-work of alveolar capillaries. It was not evident that the solidified portions of the lungs contained more than the relatively healthy parts. The prominent symptoms being those commonly referred to as from shock, the question naturally arises how far they and perhaps the pneumonia were to be attributed to the fat-embolism. In the recorded cases of Wagner and Bergmann, as well as in the experiments of Busch, death had taken place much earlier, from edema of the lungs.

The brain was not examined; this omission is the more to be regretted because a strong degree of probability exists that oil globules are present in the cerebral capillaries in such cases, as well as in the lungs and elsewhere.

***Ebolism of the Pulmonary Arteries; Death within Fifteen Minutes.* — DR. FITZ showed the specimens, from a patient of Dr. Cabot, a man aged fifty, who had suffered from chronic ulcers of the leg since his youth. He entered the Massachusetts General Hospital with an open ulcer on the left leg, and**

giving a history of considerable dyspnoea with slight cough the previous two weeks, but without expectoration. For some time there had been an occasional fluttering sensation in the region of the heart. The patient was very weak, the face pale, the lips blue. The pulse was fair but rather quick. The heart's action was tumultuous, and was felt over an increased area, though no murmur was detected. The urine was albuminous, with a specific gravity of 1013; it contained granular hyaline casts, with blood and pus.

While being carried to the ward the patient had an attack of faintness. Two days after entrance, when feeling quite comfortable, he became suddenly oppressed in breathing, with a feeling of constriction at the base of the sternum, paroxysms of unconsciousness, lividity, and a rapidly failing pulse. Death occurred within fifteen minutes from the onset of the attack.

A recent thrombus as large as the index finger was found in the femoral vein. Both primary pulmonary arteries were plugged with clots; the right contained an adherent, slightly decolorized embolus, from which there had been a continued thrombosis in both directions. The clot in the left pulmonary artery was very closely wedged in. All excepting the decolorized embolus were evidently of very recent origin. The continued thrombi extended into tertiary branches. The heart was hypertrophied and dilated with chronic ventricular and aortic disease. The kidneys presented the alterations due to chronic parenchymatous nephritis, with advanced fatty degeneration.

Old Ununited Fracture of the Tibia and Fibula. — The case was that of a woman aged thirty-three, who, when two years old, had fractured her leg. She had entered the Massachusetts General Hospital for amputation, as the deformity was such (the fragments being at right angles) that she preferred to have the foot taken off. DR. PORTER, at the meeting held November 22, 1875, showed a plaster cast of the lower extremity before amputation, and also the bones presenting the false joint. The specimen was also exhibited to the Society for Medical Observation, by Dr. Porter, and the case was published.¹ The bones had been recently prepared and dried for the college museum, and were now shown again by Dr. Jackson with reference to certain interesting points, some of which were not referred to in the printed report. The tibia was fractured three inches and one fourth above its inner lower extremity. The upper fragment completely overlapped the lower, and the two formed a perfect right angle, the union being very close and strong, but not by bone. The upper extremity of the fibula, which is very slender, was united to the outer surface of the tibia very closely and strongly, but not by bone; and, evidently for the purpose of retaining it in this remarkable position, the tibia had thrown out just below it a piece of compact bone of considerable size. Below this point the fibula was entirely wanting, but the lower extremity still remained, of full size, and having its usual relations to the tibia and to the ankle-joint. This fragment of bone, which was scarcely one and a half inches in length, terminated superiorly in a sharp point. The tibia having been sawed longitudinally, there was seen to be only the trace of a central cavity in the lower fragments, and none at all in the upper.

The patient, as already reported, broke her leg when she was two years old and had it amputated at the age of thirty-three, as an incumbrance.

¹ *Boston Medical and Surgical Journal*, January 10, 1876, page 74.

JANUARY 24, 1876. *Large Fibroid Tumor of the Uterus.* — DR. WHEELER reported the case and showed the specimen.

Mrs. T. R., aged fifty-seven, menstruated early, and married at nineteen years of age; she had but one child. When she was at the age of twenty-four the tumor was first discovered pressing up above the pubic bone, a little to the left of the mesial line. Two years after this date Dr. Wheeler examined the patient, and diagnosed a uterine fibroid as large as a medium-sized cocoa-nut, the uterine cavity measuring four inches in length. From this stage onward the growth of the tumor was very gradual, affecting the general health of the patient but little. She suffered from the weight and pain from pressure, and also had at times severe menorrhagia, which followed her until the menopause took place, two years since (at the age of fifty-five); subsequently to this event the growth continued gradually to diminish in its size until the patient's death. During the last few years of life she had some urinary symptoms, the bladder and the kidneys became troublesome, there was continuous pain in the left lumbar region, and pus appeared in the urine; at times in the last six months pus from the central portion of the tumor made its way through a fistulous opening into the vagina. There were no cerebral symptoms.

Autopsy, twenty-four hours after death. There was great emaciation of body. No oedema of the lower extremities was found; there was no ascitic fluid, and the peritoneum was free from adhesions. The fibroid filled two thirds of the cavity, and reached nearly up to the ensiform cartilage.

The bladder contained pus. The right kidney was enlarged and in a state of fatty degeneration. In place of the left kidney a cyst was found filled with a thin fluid, undoubtedly produced by pressure obstructing the ureter, which was elongated and of the size of a finger. The anterior wall of the uterus was healthy; the cavity extended the whole length of the tumor (twelve inches or more). The weight of the tumor was twenty-three pounds.

DR. JACKSON remarked, in reference to the great size of the tumor in this case, that uterine fibroids seem disposed to grow to a much larger size in this country than in Europe. He referred to the case that was reported to the society by Dr. Wheeler two or three years ago, and afterwards published in the Boston Medical and Surgical Journal; the uterus, with the tumor, which was shown to the society, weighing fifty-two pounds. And the perfectly enormous tumor that is described and figured by Dr. Gross in one of the early editions of his work on Pathological Anatomy might be instanced. He had notes of specimens that he had seen in foreign museums, and that were spoken of as "enormous," but which, in regard to size, would attract very little attention here.

The uterine cavity was greatly elongated in Dr. Wheeler's specimen, as it very generally is in this disease. But, Dr. Jackson remarked, there may be a large fibroid developed toward the peritoneal cavity, without elongation; as, on the other hand, in a case of encysted ovary, the uterus may be elongated as well as the Fallopian tube. He had long ago observed these facts, and had more than once remarked to the society upon the importance of bearing them in mind in the use of the uterine sound.

DR. STORER also spoke of the almost constant lengthening of the uterine cavity in case of fibroids, and its comparative rarity in ovarian disease.

Rupture of the Heart; Embolism of the Coronary Artery.—DR. E. G. CUTLER reported the case and showed the specimen.

The patient, a woman seventy-seven years of age, had complained for two or three days of more or less pain in the precordial region, which was easily controlled by simple remedies. The day before she died, the pain, never of great intensity, shifted to the left shoulder and extended down the arm.

The autopsy gave the following appearances: The lungs, with the exception of an old cicatrix in each apex, were healthy; there were small old adhesions to the parietal pleura, corresponding with cicatrices. The pericardium was distended with bloody serum and a large, dark, soft coagulum. The left ventricle was contracted; the right auricle and ventricle were partially contracted. There was a rent in the right ventricle about an inch in length, from which a dark clot protruded; the rent was near the base of the ventricle, directly in the course of the right coronary artery. A probe passed from the rent into the right ventricle. On cutting open the heart a broken-down thrombus was found in the left ventricle. The coronary arteries were much dilated in the commencement of their course, and were calcified; on cutting open the right artery an embolus was found completely plugging it. On microscopical examination the heart was found to be everywhere fatty degenerated. The wall of the right ventricle was thinner than normal, and friable, and the change in nutrition caused by the embolus was considered to be the determining cause of the location of the rupture. The uterus was much atrophied, and had on the fundus at the posterior portion a calcified fibroid of the size of a cherry. Calcified blood-vessels were found in Douglass's space.

DR. FITZ said that this specimen reminded him of the case of the late Dr. Hitchcock, where an embolism of the coronary artery was also found, the angina pectoris being more marked. In that case, however, there was no rupture, but the plugging of the artery had caused an extensive acute fatty degeneration of the substance of the heart, a sort of anæmic necrosis. In Dr. Cutler's specimen the fatty degeneration was evidently the result of a more remote cause, the chronic inflammation of the coronary arteries; the relative position and age of the embolus and the rent suggested an intimate connection between the two.

DR. JACKSON said that Dr. James Jackson used to remark upon pain in the left shoulder as an occasional symptom in acute pericarditis, and that it sometimes extended down the arm as far as the elbow. From the occurrence of this symptom in the case of his son, Dr. James Jackson, Jr., he was led to diagnosticate pericarditis, and an examination after death showed that he was not mistaken.

The uterus in Dr. Cutler's case was examined by Dr. Jackson, and the upper extremity of the cervix was found to be obliterated. This condition of the organ he had often met with in old women; the cavity of the body sometimes containing a viscid, colorless serum, and sometimes a bloody fluid, with ecchymosis of the mucous surface.

DR. ABBOT said that he should not consider pain in the left shoulder a pathognomonic symptom of pericarditis, as he had seen several cases of this disease during the past year, in none of which it was present.

PROFESSIONAL EDUCATION AT HARVARD.

THE annual report of the President of Harvard College contains several interesting statements in reference to raising the standard of education in its professional schools. Important changes have taken place in the plan of instruction employed by the law school as well as by the medical department of the university. In regard to the preliminary examination which is to be demanded of applicants for admission to both of these schools at the beginning of the year 1877-78, he says the university is only doing its duty to the learned professions of law and medicine, "which have been for fifty years in process of degradation through the barbarous practice of admitting to them persons wholly destitute of academic culture." It is the faculties and governors of our professional schools who are responsible for this condition of affairs; having but feeble faith in the value of academic training, or being afraid of diminishing the number of their pupils, they have failed to demand of candidates for admission an adequate general education. This attitude of the professional schools has acted as a direct injury to the high schools, academies, and colleges of this country, "which have been deprived of the legitimate support which in every other civilized country they derive from the fact that only through them can the learned professions be reached."

While the old system of lectures prevailed, the ignorance of the students in attendance did not become apparent; but under the improved methods of instruction now employed, by which the student is brought into closer contact with his teacher, and is obliged to take an active part in the exercises of the school, the presence of a large number of uneducated students of the standard with which many of us are only too familiar would become a serious impediment. The importance of an academical training, as well as of much of the work which should be exacted in a properly organized school, is considered by President Eliot, and, as we have already shown, by no less an authority than Professor Billroth, valuable not for the sake of the knowledge which the training imparts, but for the mental power which it develops. There are exceptional persons who succeed by force of great natural endowments; we have many such in our profession. In regard to these men, Mr. Eliot forcibly remarks, "Genius has seven-leagued boots, but common men require a well-made road."

It was thought that the vigorous measures introduced into the professional schools would seriously affect their income, and thus lessen their efficiency. A glance at the receipts of the medical school for the last three years will show that there are no grounds for any such fears. In the first year of the new organization, 1870-71, the income of the school was \$27,717.67. It had fallen off several thousand dollars in the third year, but subsequently it increased steadily, and in 1874-75 amounted to \$36,661.58.

We find also that the proportional number of students drawn to the school from without New England and the British Provinces has doubled in six years, and the proportion of students who hold literary or scientific degrees has nearly doubled.

Another very significant fact is the increased average length of residence at

the school of the persons admitted to its degree. This is clearly shown by tables given in the report. In 1872 only twenty per cent. of the persons graduated had spent two years or more in the school; in 1875 ninety per cent. had been in residence two years or more, and forty-seven per cent. had been three years in the school. Finally, it has been found that the number of students who remain at the school during both terms has rapidly increased since 1870-71, when but a little over one fifth of those who attended during the winter term remained for the summer term. Last year nearly seven eighths of the number present for the first term remained for the second term. It will be readily seen that a school which can introduce successfully a method of teaching entailing an increased length of residence of its pupils, can suffer a reduction in their number without a diminution in its money receipts.

We commend this report to all teachers of medicine as a document well worthy of careful study. We offer no excuse for alluding so repeatedly in our columns to the subject of medical education, as we are convinced that there is no subject to-day of so vital importance as this to the profession in the United States.

HANGING AS A FINE ART.

THE discussion concerning the manner of executing criminals that wakes up every now and then has just been reopened in Ireland by a paper by the Rev. Dr. Haughton on the method of hanging. It may be remembered that in his work on *Animal Mechanics*, that appeared in 1870, he turned somewhat aside to give a formula for the length of the rope, which should be deduced from the weight of the criminal. It is briefly as follows: "Divide the weight of the criminal in pounds into 2240, and the quotient will give the length of the long drop in feet." According to this a criminal weighing one hundred and sixty pounds should fall precisely fourteen feet. In 1865 a man weighing one hundred and sixty pounds was executed at Dublin with a fall of fourteen feet six inches. The neck was broken, and all the soft parts except the skin were cut through by the rope. In 1870 Andrew Carr, who weighed two pounds less than the last-mentioned criminal, was executed with a drop of fourteen feet. But to the horror of all concerned, especially of the jail physician, who had put his trust in mathematics, the head was completely severed from the body. This was considered highly unsatisfactory by every one, excepting probably the criminal, and Dr. Haughton was requested to investigate the facts. He made the very interesting discovery that this accident was due to the want of elasticity of the rope. He compares the circumstances to those of bringing a ship under headway to a wharf by a hawser. If this be firmly attached at each end, it will be snapped; but if it be allowed to give slowly by being coiled once or twice around a post, it will gradually arrest the ship. Thus an inelastic rope will have a shearing action which an elastic one will not.

Another point of equal if not greater importance is the position of the knot. There are three chief places for it, to wit, under the occiput, under the ear, and under the chin. The first of these is the one that till of late has been used in England; the subaural is that now most generally in use there, as it is here in America; the submental one we agree with Dr. Haughton in consider-

ing the best. The danger is that it may slip off or to one side, but this may be obviated by drawing it pretty tight, or better still, as suggested by Dr. Haughton, by running the rope through a small iron bar to rest under the chin. The advantage of this is that with a drop of some length the face is thrown so violently upward that a fracture or dislocation is very certain. Even if this should not occur, the shock must be sufficient to produce insensibility. With this arrangement of the knot, a tolerably elastic rope, and a drop of about ten feet, we may gain all that is desired in capital punishment: an impressive, painless, and disgraceful death.

MEDICAL NOTES.

— We have received the first number of *New Remedies* in its new form. It has become a monthly journal, and will hereafter be issued on the 15th of each month. It contains much valuable matter, and promises to become a very useful journal to druggists and pharmacists. — Among the new medical journals appearing this season is the *West Virginia Medical Student*, a monthly medical periodical edited by James E. Reeves, M. D. It is the only medical journal published in West Virginia. It has already met with considerable success. — Number IV. of the second volume of the Transactions of the Society of the District of Columbia contains articles on hypertrophy of the heart with valvular disease, aneurism of the aorta, and accounts of two monstrosities. The discussion on these papers is given in detail, and the report shows considerable activity among the members of the society. The committee on publication are Drs. Kleinschmidt, Ross, and W. W. Johnston.

LETTER FROM BERLIN.

MESSRS. EDITORS,— The question used to occur to me, as I presume it does to many an American medical student, why so many Americans go abroad to study, while we have so large and so rich medical schools at home. So far as "studying abroad" is concerned, it is not, certainly, without many disadvantages. To learn a new language, a new medical vocabulary, new stand-points of treatment; to acquire the habits of an European people; to forget the luxuries of a practical American life,— such are some of the obstacles to successful study. One must, however, look at the distribution of American students to determine their purpose in selecting a foreign university. It is not the medical undergraduate who is abroad; such are exceptions. It is either the young graduate who seeks a specialty before undertaking general practice, or the practitioner who after a few years of work at home wishes to improve himself in his specialty, or to pursue the never-ending investigations which pertain to the fundamental studies of physiology, pathology, and physics, for which the German universities, par excellence, are so justly celebrated. I firmly believe that an undergraduate can do better at home, certainly as to cliniques and the opportunity of seeing dexterous operations.

In the old Friedrich-Wilhelms Universität of Berlin there are matriculated in this winter semester, from November to April, 2143 students, of whom 263 are regular students in medicine. This number does not include 2000 more, who are distributed in the schools of mining, agriculture, art, etc. I am unable to give the number of American medical students, but of the 4100 there are 62 from America, of whom seven eighths are from the United States while all Great Britain sends only 12. This gross difference may be accounted for by the fact that the universities of Great Britain are well prepared to receive students who seek a higher education. It is, however, by no means true that one may receive the best instruction in a large town. Much is to be learned at smaller universities, as those of Halle, Leipzig, Würzburg, of Germany; Zurich, of Switzerland; and Utrecht, of Holland. One may naturally infer from the system of instruction that a result obtains here which does not accrue to an American medical school. The audiences are small and are distributed all over the town, where the different branches of instruction are given. There are sixty-six professors and instructors in the medical department alone, giving an average of four students to a teacher. Du Bois Reymond in physiology, Virchow in pathology, and Langenbeck in the surgical clinique probably command the largest medical audiences.

The experience of the American student on coming to Berlin is universally peculiar. Arriving here with the full purpose of hearing the "opening lecture," he starts out bright and early on the morning of October 16th, as directed in the official circular, to listen to Professor Virchow; but he is confronted with the half-Latin, half-German announcement on the bulletin board that Virchow will first read on November 7th, hour not stated. Retracing his steps through the immense grounds and the long halls of the Charité, a hospital whose full outfit of beds in all departments aggregates seventeen hundred, he tries Professor Frerichs's medical clinical theatre, and finds himself put off to November 5th, two days better. Punctually at two o'clock p. m., he walks over to the Jewish end of the "medical quarter" of the town to see Baron Langenbeck's first public surgical clinique; but here again is he disappointed; he looks upon an old-fashioned, dangerously-steep amphitheatre of one hundred and twenty seats, and slowly translates the announcement that Professor Langenbeck will first operate in three weeks or so. Such is the story. However, a few days of search and of Yankee inquiry, and of study of the official circular, will acquaint him with several small special cliniques which he can visit daily, and where he is as welcome as at any similar institution at home. It is, I am told, peculiar to this university, the method of having these so popularly known "universität-kliniks" in every quarter of the town. Naturally the vicinity of the Charité, known as the "medical quarter," contains the largest number. One can hardly walk five minutes here without seeing in a parterre, or second flight, the announcement of a royal university clinique for special diseases. On comparing the location with his official circular, he finds that this uninviting, dingy, brown building is the location of Professor Schweigger's eye clinique, Schweigger having been for so many years Graefe's first assistant, and now his successor to the university professorship; and that larger but equally ancient-looking structure in a side street is Lucae's ear clinique, where

also, in another part of the building, is Langenbeck's daily surgical clinique. A custom prevails here whereby clinical instruction is made exceedingly profitable; it obtains chiefly with the privat-docents, or official instructors. They hold once or twice a week a free public clinique, open to all students. As a rule, it is held in their private offices, and some of them fall on Sunday morning. It is usually confined to special instruction, and the audiences are small; full opportunity to see and to ask questions is afforded, and the student who can appreciate cannot but profit by the opportunity. Yankee inquiry alone explained to me the arrangement, peculiar to Germany, I believe, and one which is not popular at home, so far as I know. The instructor who presents the largest number of names of students is, *cæteris paribus*, entitled to first consideration when the selection of a new professor is to be made. This does not apply to cliniques alone. For instance, Dr. Tobold is not yet a professor; in his capacity as instructor he gives a course on laryngoscopy, one hour a week, clinical or didactic, throughout the whole semester; so, too, Fraenkel on laryngoscopy and rhinoscopy, Hirschberg and Schoeler on the eye, Weber-Liel on the ear, etc. These are free to matriculated students. Every such instructor has in addition a private course, at an average price of five dollars, consisting of from ten to fifteen hours. It will readily occur to those of your readers who have studied in Berlin what their impression is of these courses by the instructors. My own opinion is that one can learn much more from them than from the professors.

In Vienna the arrangement is somewhat different. The courses are of eight weeks' duration, and are so arranged that the student can pursue allied branches together, thus working with more rapidity; whether the plan produces better results I am not prepared to say. It is the general impression with foreigners that Vienna is the city to visit for special medical study—a statement which in so broad a view will hardly have corroboration. Before one makes a start for a German university, let him satisfy himself as to what he wants to do; then acting upon advice at home, or in London or in Paris, he should go directly to the destination intended, whether it be Vienna, Berlin, Leipzig, or Prague. The courses change but little from year to year as to time. Of one point I am satisfied; a student can find enough to do in Berlin, and the town itself is more conducive to study than Vienna. Naturally the German is better; but, allow me to add, one must forget Hanover or Brunswick or Magdeburg, in alluding to Berlin German. Lastly, the theatres are good and not expensive, to the best of which the matriculated student has the *entrée* at half price.

A provision in the will of Von Graefe fell under my eye the other day, which is of peculiar interest. It was that his immense eye clinique at the end of Karlstrasse, in which Dr. Richard H. Derby, of New York, was an assistant at the time of Graefe's death, be abandoned. The request was complied with, and there is now an ordinary *distillation*, or liquor shop, upon its site. The result is that as one stands on the corner of Karlstrasse and Luisenstrasse one may see no less than five eye cliniques, conducted under the auspices of the assistants of the renowned oculist. There are thirteen eye cliniques in the town, but these five are the direct result of Von Graefe's work in that part

of Berlin. His clinical armamentarium is to be seen daily, still in use by his assistants, and it would be strange if some of it had not gone to America.

My letter has been chiefly upon the opportunities of medical study in the university at Berlin. The intention was, if possible, to assist students who contemplate devoting any time to study in Germany. While Virchow, Helmholz, Langenbeck, and Du Bois Reymond are beacon-lights attracting medical students to Berlin, it must be remembered that minutiae are learned more from assistants, and by private instruction and hard personal application, than directly out of the mouths of these men. Even an American can hardly afford the money, and certainly not the time, to attain merely the distinction of possessing the signature of these men. A word about Virchow, and I will close. All in all, he is one of the most remarkable medical men I ever knew. His personnel is by no means striking. He is below the average German stature, of a dingy complexion, and with an impassioned expression; one fails to detect the depth of his researches in science, or the strong will or the cutting sarcasm which characterize him. An hour in the Pathologisches Institut easily demonstrates his accurate study in that part of medical science to which he has devoted the most hours of the best part of his eventful life. His political tenets, at variance with those of the chancellor of the empire, and in sympathy with that large radical party of Germany whose ideal may be seen in nearly every European government of to-day, call it by whatever name you please, liberalism, radicalism, or conservatism, have developed an iron will and a bitter sarcasm which make him a species of terror to the government. In other ways is he remarkable. Always late at his lecture, and appearing now but twice a week, he has time enough, apparently, for the numerous demands made upon him. On the same day he is to be seen from nine to eleven A. M. in the Pathologisches Institut, demonstrating, with a vast array of material, cellular pathology; and from five to seven or eight P. M. in the Chamber of Deputies of Prussia, of which this week he was elected vice-president, over the nomination of his predecessor; later, hard at work in the Royal Geographical Society. Besides these official appointments he is chief editor of a popular journal of science, contributes occasionally an article to scientific bodies, and gives popular lectures in the winter. I have alluded to his life as an eventful one. It may not be generally known on our side of the water that, in the revolution of 1848, he fought as a common soldier behind the trenches; that he was forced to abandon his professorship here on account of his political doctrines, and that he went to Würzburg, where the book of his life — the exposition of the cellular pathology — was written; that the government was obliged to recall him to his department in the university on account of the urgent demand of scientific men, who recognized his worth by the new book; that later Prince Bismarck challenged him to a duel, whose acceptance he had the courage to refuse; these and many other events of his life make Rudolph Virchow one of the most conspicuous men of the day in Germany. I am told that he regrets the comment not long ago made about him, that he was a severe critic as to the merits of other men. Virchow is poor, lives on the second flight, and complains that he cannot live as a gentleman of his standing should. A sketch of his life,

by Herbert Tuttle, of Berlin, formerly of Boston, will shortly appear in the Routledge series, under the title of German Political Leaders.

Very truly yours,

MED.

BERLIN, January 5, 1876.

COMPARATIVE MORTALITY-RATES FOR THE WEEK ENDING FEB. 5, 1876.

	Estimated Population.	Total Mortality for the Week.	Annual Death-Rate per 1000 during Week.
New York	1,060,000	566	28
Philadelphia	800,000	335	22
Brooklyn	500,000	243	25
Boston	342,000	191	29
Providence	100,700	29	15
Worcester	50,000	15	16
Lowell	50,000	14	15
Cambridge	48,000	19	21
Fall River	45,000	9	10
Lawrence	35,000	11	16
Lynn	33,000		
Springfield	31,000	15	24
Salem	26,000	10	20

Normal Death-Rate, 17 per 1000.

THE members of the Boston Medical Library Association propose to open their rooms on the 22d inst. for the inspection of all physicians, dentists, and pharmacists who may feel inclined to take advantage of a holiday to see for themselves the progress which has already been made in the establishment of a useful library for consultation. Through the energy of those who have inaugurated this undertaking, the list of periodical literature which is to be found on its catalogue comprises a very large number of American and foreign journals, while generous contributions from private libraries have supplied back numbers of periodicals and many rare and useful medical works. The size of the collection is rapidly assuming such proportions as to insure its ultimate success. There are many features the advantages of which are not apparent without personal inspection. We understand that the bodies as well as the minds of the guests of the association will receive refreshment, and we strongly advise those, who may have the opportunity, to visit the association's rooms in Hamilton Place.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.—A regular meeting of the society will be held on Monday evening, February 21st, at eight o'clock, at the hall in Temple Place. Reader, Dr. C. P. Putnam. Subject, A Case of Croup.

ERRATUM.—In the clinical chart published in connection with Dr. Richardson's paper in the JOURNAL of February 3, 1876, the first vertical red line, marking the date at which local treatment was begun, should be opposite October 20th, instead of October 22d.